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ABSTRACT

This bibliography lists the most useful and scientifically accurate astronomy books published in the 1980s for beginners and students. The books are categorized under the topics of: (1) astronomy in general; (2) solar system as a whole; (3) planets; (4) asteroids, comets, and meteorites; (5) the sun; (6) stars and their evolution; (7) mikly way galaxy; (8) galaxies and quasars; (9) origin and evolution of the universe; (10) invisible astronomy; (11) search for the life elsewhere; (12) telescopes and other instruments; (13) computers and astronomy; (14) history of astronomy; (15) manuals for sky observing; (16) astrophotography; (17) amateur astronomers; (18) reference books; (19) books for children; and (20) magazines. A brief summary of each book is provided. (YP)

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A Basic Astronomy Library

by **Andrew Fraknoi**

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The books below represent a personal selection of the most useful and scientifically accurate astronomy books for beginners and students published in the last decade. In narrowing the choices to a manageable list, many excellent books had to be omitted. Still, if you start with some of the books and authors listed here, you will have some of the world's most eloquent and skillful guides at your side to help you explore the universe.

■ Books on Astronomy in General

Bartusiak, M. *Thursday's Universe*. 1986, Times Books. Frontier areas of astronomy, as explained by a skilled science journalist.

Chaisson, E. *Cosmic Dawn*. 1981, Berkley paperback. An eloquent primer on the evolution of the universe and our place in it. (A sequel, called *The Life Era*, was published by Atlantic Monthly Books in 1987.)

Ferris, T. *Galaxies*. 1980, Stewart, Tabori & Chang. Lavishly illustrated introduction to the large-scale cosmos by a noted science writer.

Goldsmith, D. *The Astronomers*. 1990, St. Martin's Press. Focuses on the work of two dozen key astronomers. (Ready in late 1990.)

Hartmann, W. & Miller, R. *Cycles of Fire*. 1987, Workman. Over-sized paperback with gorgeous color illustrations, introducing the realms of the stars and galaxies.

Jastrow, R. *Red Giants and White Dwarfs*, 2nd ed. 1979, Warner paperbound. Good, basic book on the evolution of the universe and humankind.

Preiss, B. & Fraknoi, A., eds. *The Universe*. 1987, Bantam. Collection of introductory articles by noted astronomers and science fiction stories inspired by good science.

Preston, R. *First Light*. 1987, Atlantic Monthly Books. Eloquent introduction to modern astronomy through the life and work of a few of its finest practioners.

Sagan, C. *Cosmos*. 1980, Ballantine paperback. A superbly-written, highly personal tour of the universe; based on the PBS TV series.

Trefil, J. *Space Time and Infinity*. 1985, Smithsonian Press. A beautiful coffee table book introducing modern astronomy.

■ Books about our Solar System as a Whole

Chapman, C. & Morrison, D. *Cosmic Catastrophes*. 1989, Plenum. Fascinating introduction to impacts, collisions, and solar system violence.

Eliott, J. & Kerr, R. *Rings*. 1984/7, MIT Press. Introduction to the rings around Jupiter, Saturn, and Uranus.

Frazier, K. *Solar System*. 1985, Time-Life. Profusely illustrated guide to the planets by a fine science writer.

Miller, R. & Hartmann, W. *The Grand Tour*. 1981, Workman paperbound. A guide to the solar system, illustrated with photos and paintings.

Morrison, D. & Owen, T. *The Planetary System*. 1988, Addison-Wesley. A fine up-to-date textbook that can be read for pleasure.

Preiss, B., ed. *The Planets*. 1985, Bantam. A collection of authoritative articles about each planet and some science fiction based on them.

■ Books About Specific Planets

Burgess, E. *Venus: An Errant Twin*. 1985, Columbia U. Press.

Cattermole, P. & Moore, P. *The Story of the Earth*. Cambridge U. Press.

Davis, J. *Flyby*. 1987, Atheneum. Mainly about Uranus, but with sections on Jupiter and Saturn.

Hockey, T. *The Book of the Moon*. 1986, Prentice Hall.

Littmann, M. *Planets Beyond: The Outer Solar System*. 1988, Wiley. Good introduction to Uranus, Neptune, and Pluto.

Moore, P. *The Planet Neptune*. 1988, Horwood/Wiley.

Morrison, D. & Sams, J. *Voyage to Jupiter*. 1980, NASA Special Publication #439, US Gov't Printing Off.

Morrison, D. *Voyages to Saturn*. 1982, NASA Special Publication #451, US Gov't Printing Off.

Strom, R. *Mercury: The Elusive Planet*. 1987, Smithsonian Inst. Press.

Washburn, M. *Mars at Last*. 1977, Putnam's.

Tombaugh, C. & Moore, P. *Out of the Darkness: The Planet Pluto*. 1980, Stackpole Books. (Out of print; but worth searching for.)

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A Basic Astronomy Library

■ Books About Asteroids, Comets, and Meteorites

Chapman, R. & Brandt, J. *The Comet Book.* 1984, Jones & Bartlett paperbound. Introduction to comets by two noted experts in the field. Should soon be available in a revised edition from W. H. Freeman & Co.

Dodd, R. *Thunderstones and Shooting Stars: The Meaning of Meteorites.* 1986, Harvard U. Press.

Kowal, C. *Asteroids: Their Nature and Utilization.* 1988, Horwood/Wiley. Best introduction.

McSween, H. *Meteorites and their Parent Planets.* 1987, Cambridge U. Press. What meteorites are and where they come from.

Sagan, C. & Druyan, A. *Comet.* 1985, Random House. Beautiful book of comet science and lore, with good background on the solar system.

Whipple, F. *The Mystery of Comets.* 1985, Smithsonian Inst. Press. Personal account by the scientist who first explained the nature of comets.

■ Books about the Sun

Frazier, K. *Our Turbulent Sun.* 1983, Prentice-Hall. A science writer reviews the modern picture of our local star.

Friedman, H. *Sun and Earth.* 1986, Scientific American Library. Very nice primer on the Sun and its relationships with our own planet.

Noyes, R. *The Sun, Our Star.* 1982, Harvard U. Press. Good introduction to the astronomy of the Sun by a Harvard astronomer.

Wentzel, D. *The Restless Sun.* 1989, Smithsonian Institution Press. Excellent and up-to-date.

■ Books about Stars and Their Evolution

Cohen, M. *In Darkness Born: The Story of Star Formation.* 1988, Cambridge U. Press. Introduction to stellar infancy and youth.

Greenstein, G. *Frozen Star.* 1983, Freundlich. Eloquent book about the death of stars and what it is like being an astronomer today.

Kaler, J. *The Stars and their Spectra.* 1989, Cambridge U. Press. Definitive book on what we can learn about stars by decoding their light. (Somewhat more advanced.)

Kaufmann, W. *Black Holes and Warped Spacetime.* 1979, Freeman paperbound. Best introduction to black holes and the theories behind them.

Kaufmann, W. *Stars and Nebulas.* 1979, Freeman paperbound. Brief primer on stars and their lives.

Kippenhahn, R. *100 Billion Suns: The Birth, Life, and Death of the Stars.* 1983, Basic Books. Nontechnical review of stellar evolution.

Marschall, L. *The Supernova Story.* 1988, Plenum. Excellent introduction to exploding stars and Supernova 1987A.

Moore, P. *Astronomers' Stars.* 1987, Norton. Profiles of individual stars whose understanding was crucial to the progress of astronomy.

■ Books about our Milky Way Galaxy

Bok, B. & P. *The Milky Way,* 5th ed. 1981, Harvard U. Press. A superb summary by one of this century's foremost astronomers.

Verschuur, G. *Interstellar Matters.* 1989, Springer-Verlag. A history of how we learned about the gas and dust between the stars.

■ Books about Galaxies and Quasars

Harrington, S., et al. *Learning About Quasars.* 1990, Astronomical Society of the Pacific information packet. Collection of articles about observations of quasars and theories about what they might be.

Hodge, P. *Galaxies.* 1986, Harvard U. Press. A thorough introduction to our modern understanding of galaxies.

Kaufmann, W. *Galaxies and Quasars.* 1979, Freeman paperbound. Clear basic guide to what lies beyond our Milky Way Galaxy.

Wright, A. & H. *At the Edge of the Universe.* 1989, Horwood/Wiley. Searching for the most distant objects, especially quasars.

■ Books about the Origin and Evolution of the Universe

Barrow, J & Silk, J. *The Left Hand of Creation: Origin and Evolution of the Expanding Universe.* 1983, Basic Books. A good up-to-date discussion of modern theories and observations.

Cornell, J., ed. *Bubbles, Voids, and Bumps in Time.* 1989, Cambridge U. Press. Excellent articles on mapping and understanding the universe.

Ferris, T. *The Red Limit,* 2nd ed. 1983, Morrow/Quill paperbound. Good history of how large-scale properties of the universe were discovered.

Gribbin, J. *In Search of the Big Bang.* 1986, Bantam paperbound. Thorough, readable introduction to our quest for the universe's origin.

Harrison, E. *Cosmology.* 1981, Cambridge U. Press. A superb, literate textbook on large-scale questions about the universe.

Pagels, H. *Perfect Symmetry.* 1985, Bantam. A readable introduction to the science of the universe beginning, from the perspective of a physicist.

Trefil, J. *The Moment of Creation.* 1983, Macmillan paperbound. Fine introduction to our modern understanding of the Big Bang. (See also his *The Dark Side of the Universe,* 1988, Scribner's.)

Tucker, W. & K. *The Dark Matter.* 1988, Morrow. On the quest for the "hidden mass" of galaxies and the universe.

■ Books about Invisible Astronomy

Field, G. & Chaisson, E. *The Invisible Universe*. 1985, Birkhauser. About the many interesting phenomena revealed by modern instruments but not visible to the eye, and about plans for future telescopes.

Friedlander, M. *Cosmic Rays: Tracking Particles from Space*. 1989, Harvard U. Press.

Tucker, W. & Giacconi, R. *The X-Ray Universe*. 1985, Harvard U. Press. Fine introduction to cosmic phenomena that produce X-rays.

Verschuur, G. *The Invisible Universe Revealed*. 1987, Springer-Verlag. A fine introduction to the discoveries and techniques of radio astronomy.

■ Books about the Search for Life Elsewhere

Goldsmith, D. & Owen, T. *The Search for Life in the Universe*. 1980, Benjamin/Cummings. A basic introductory text in this field.

McDonough, T. *The Search for Extraterrestrial Intelligence*. 1987, John Wiley. Good-humored, basic book.

Rood, R. and Trefil, J. *Are We Alone?* 1981, Scribners paperbound. Popular-level introduction to life out there and the search.

■ Books about Telescopes and Other Instruments

Cohen, M. *In Quest of Telescopes*. 1980, Cambridge U. Press. Nice book on what it is like to use big telescopes and be an astronomer today.

Cornell, J. & Gorenstein, P. *Astronomy from Space*. 1983, MIT Press. Chapters by various astronomers on the results from and plans for exploring the universe with instruments in space.

Davies, J. *Satellite Astronomy*. 1988, Horwood/Wiley.

Field, G. & Goldsmith, D. *Space Telescope: Eyes Above the Atmosphere*. 1990, Contemporary Books.

Krisciunas, K. *Astronomical Centers of the World*. 1988, Cambridge U. Press. History of major observatories from ancient days through today.

Tucker, W. & K. *The Cosmic Inquirers*. 1986, Harvard U. Press. Well-written stories of some of the biggest telescopes on Earth and in space.

■ Books on Computers and Astronomy

Burgess, E. *Celestial Basic*. 1982, Sybex.

Duffett-Smith, P. *Astronomy with Your Personal Computer*, 2nd ed. 1987, Cambridge U. Press.

Duffett-Smith, P. *Practical Astronomy with Your Calculator*, 3rd ed. 1988, Cambridge U. Press.

Genet, R. & Hayes, D. *Robotic Observatories*. 1989, AutoScope Corp., P.O. Box 40488, Mesa, AZ 85274.

Lawrence, J. *Basic Astronomy with a PC*. 1989, Willmann-Bell.

■ Books on the History of Astronomy

DeVorkin, D. *Race to the Stratosphere: Scientific Ballooning*. 1989, Smithsonian Inst. Press.

Evans, D. *Under Capricorn: A History of Southern Hemisphere Astronomy*. 1988, Adam Hilger. Astronomical developments in Australia & elsewhere.

Ferris, T. *Coming of Age in the Milky Way*. 1988, Morrow. Eloquent, poetic book on the development of our ideas about the universe.

Gingerich, O., ed. *Astrophysics and 20th Century Astronomy to 1950*. 1984, Cambridge U. Press. Excellent collection of articles; the first in a series of historical collections from Cambridge.

Krupp, E. *Echoes of the Ancient Skies*. 1983, NAL paperbound. Introduction to the astronomy of earlier civilizations around world.

Osterbrock, D., et al. *Eye on the Sky*. 1988, U. of California Press. The history of the Lick Observatory, the first of the major astronomical observing centers in the U.S.

Sheehan, W. *Planets and Perception*. 1988, U. of Arizona Press. History of progress and reversals in understanding the planets.

■ Introductory Manuals for Sky Observing

Berry, R. *Discover the Stars*. 1987, Harmony/Crown. A fine introduction by the editor of Astronomy magazine, with clear maps.

Beyer, S. *The Star Guide*. 1986, Little Brown paperbound. A guide to the 100 brightest stars for beginners; good charts.

Chartrand, M. *Skyguide*. 1982, Golden Press paperback. Good compact handbook for beginners, with good illustrations.

Cherrington, E. *Exploring the Moon Through Binoculars and Small Telescopes*. 1984, Dover paperbound. Good guide to a variety of lunar observations.

Harrington, S. *Selecting Your First Telescope*. 1983, Astronomical Society of the Pacific. Pamphlet on what telescope do, different types of instruments, and what to do with a new telescope.

Mayer, B. *Starwatch*. 1984, Putnam paperbound. An eccentric but clever guide on constructing star-finders from simple household materials.

Menzel, D. & Pasachoff, J. *A Field Guide to the Stars and Planets*, 2nd ed. 1983, Houghton-Mifflin paperback. Updated edition of a classic guide, full of information and with good new maps.

Moore, P. *Exploring the Night Sky with Binoculars*. 1986, Cambridge U. Press. A friendly introduction with clear instructions.

Muirden, J. *Astronomy with Binoculars*. 1984, Arco paperback. A pleasant and useful book for scanning the sky with binoculars.

Ridpath, I. & Tirion, W. *Universe Guide to Stars and*

Planets. 1984, Universe paperback. Compact guide to sky with constellation maps.

Schaaf, F. *Wonders of the Sky*. 1983, Dover. An amateur astronomer's enthusiastic guide to the joys of naked-eye observing.

Whitney, C. *Whitney's Star Finder*, 4th ed. 1985, Knopf paperbound. Clear, basic primer on sky phenomena & constellations. (Updated regularly.)

■ Books on Astrophotography

Covington, M. *Astrophotography for the Amateur*. 1985, Cambridge U. Press. A good guide for the dedicated beginner, but a bit expensive.

Gordon, B. *Astrophotography*, 2nd ed. 1985, Willmann-Bell. A textbook and manual for the amateur with some background or experience.

Little, R. *Astrophotography: A Step by Step Approach*. 1986, Macmillan. An introductory guide for the serious amateur.

■ Books for Serious Amateur Astronomers

Berry, R. *Build Your Own Telescope*. 1985, Scribners. A good step-by-step manual for making telescopes, by the editor of *Astronomy* magazine.

Jones, K. *Webb Society Deep Sky Observer's Handbook*. (5 volumes) 1982, Enslow. Background info and rich catalogs of objects to observe.

Levy, D. *Observing Variable Stars: A Guide for the Beginner*. 1989, Cambridge U. Press.

Newton, J. & Teece, P. *The Guide to Amateur Astronomy*. 1988, Cambridge U. Press. Thorough primer by two Canadian amateurs.

Sherrod, P. *A Complete Manual of Amateur Astronomy*. 1981, Prentice-Hall paperbound. Excellent guide to observing techniques and projects.

Texereau, J. *How to Make a Telescope*, 2nd ed. 1984, Willmann-Bell. A wealth of detailed information on making a telescope from scratch.

■ Some Astronomy Reference Books

Bishop, R., ed. *Royal Astronomical Society of Canada Observer's Handbook*. An annual guide to celestial events and cycles; a standard reference.

Burnham, R. *Burnham's Celestial Handbook*. 3 volumes, 1978, Dover. A detailed 2,138-page guide to objects & constellation in sky.

Lewis, R., et al. *The Illustrated Encyclopedia of the Universe*. 1983, Harmony/Crown. Many astronomers contributed to this illustrated collection of longer articles; emphasis on the solar system.

Tirion, W. *Sky Atlas 2000.0*. 1982, Sky Publ. & Cambridge U. Press. An excellent modern atlas of the sky for serious observers.

■ A Few Selected Books for Children

Apfel, N. *Astronomy Projects for Young Scientists*. 1984, Arco paperbound. Good, simple astronomy activities for junior high level and up.

Asimov, I. *Isaac Asimov's Library of the Universe*. 1988-90, Gareth Stevens. Beautifully produced, basic astronomy series for ages 8 - 12.

Berger, M. *Bright Stars, Red Giants, and White Dwarfs*. 1983, Putnam. Brief introduction to stars and their evolution. [Ages 10 -15]

Branley, F. *Saturn: A Spectacular Planet*. 1983, Crowell. Picture book summarizing our knowledge of the ringed planet. [Ages 7 - 11]

Branley, F. *Space Telescope*. 1985, Crowell. Illustrated introduction to telescopes and the big one to go in space. [Ages 8 -11]

Burnham, R. *The Star Book*. 1983, Astromedia/Cambridge U. Press. Book of cardboard star maps & instructions for beginners. [12 to adult]

Hatchett, C. *The Glow-in-the-Dark Sky Book*. 1988, Random House. [All ages.]

Krupp, E. & R. *The Big Dipper and You*. 1989, Morrow. A delightful illustrated book on stars and constellations. [Ages 6-12.]

Parker, E. *The Universe*. 1983, Cambridge U. Press. Picture book on astronomy for very young children.

Poynter, M. & Klein, M. *Cosmic Quest*. 1984, Atheneum. A nice introduction to the search for life elsewhere in the universe. [Ages 13 and up]

Taylor, G. *Volcanoes in Our Solar System*. 1983, Dodd, Mead. Discussion of volcanoes on Earth and on other planets & moons. [13 and up]

■ Astronomy Magazines

Astronomy, published by Kalmbach, Milwaukee.

Griffith Observer, published by the Griffith Observatory, Los Angeles.

Mercury, published by the Astronomical Society of the Pacific, San Francisco.

Odyssey, children's magazine, published by Kalmbach.

Planetary Report, published by the Planetary Society, Pasadena.

Sky & Telescope, published by Sky Publishing, Cambridge.

StarDate, published by the McDonald Observatory, Austin.

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